

## **ECR 2003 Submission**

### ***Control/Tracking Number***

03-E-4292-ECR

### ***Activity***

Scientific Exhibit (poster-computer presentation)

### ***Title***

Detailed classification of images for retrieval of medical images (IRMA)

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## **Abstract**

### ***Purpose***

For the real life medical use of image retrieval of images (IRMA) the classification of the image has to be performed. To support the automated classification of medical images an easy to use, tree-based, detailed examination code has to be developed.

### ***Methods***

A triplet coding system was chosen to come up with an optimal code for medical images: 1. technical code, 2. orientational code, 3. anatomical code. Analysis of radiological images (> 2000) lead to the sophisticated and detailed tree of items.

### ***Results***

The IRMA-Code describes within max. 5 positions the technical (physical imaging) method, more detailed modality-positions, and the specific technique and subtechnique and on last position a modulator to differentiate even dedicated items like type of magnetic resonance coil. The orientation description starting is two-fold: general orientations and specific positioning. Functional tasks of the examination can also be described (e.g.: standing). The IRMA-Code supports complete coding of the anatomical region or organ. There exist 10 organ systems (e.g.: CNS) each of which has max. 5 positions for exactly describe the imaged organ. The description of regions uses 9 global regions with up to three subcodes.

### ***Conclusions***

Up to 6000 images have been classified by IRMA code. It could be shown that the code is sufficient to describe more than 99% of the X-ray images completely. Due to the tree structure of the code extensions are possible for new methods. The code was an excellent help in assessment of the classification methods developed and used in the IRMA-Project.

